

WHAT IS CLAIMED IS:

1. An image processing apparatus comprising:

a document reading unit which reads a document at a constant speed and generating image data constituted by a digital signal;

a storing unit which stores the image data generated by said document reading unit together with information about the size of said read document;

an enlargement/reduction specifying unit which specifies an enlargement/reduction condition when said read document is to be output;

an enlargement/reduction factor calculating unit which calculates an enlargement/reduction factor based on the information about the size of said read document stored in said storing unit and the enlargement/reduction condition specified by said enlargement/reduction specifying unit;

an enlargement/reduction unit which carries out enlargement/reduction with respect to the image data stored in said storing unit based on the enlargement/reduction factor calculated by said enlargement/reduction factor calculating unit;

an image processing unit which carries out image processing with respect to the image data subjected to the enlargement/reduction by said enlargement/reduction unit;

and

data are calculated at the same time in both a feeding direction and a scanning direction.

5. The image processing apparatus according to claim 1,
5 wherein said enlargement/reduction unit includes

a reference data reading unit which reads, from said storing unit, image data of a reference pixel for calculating relocation data in a plane area; and

a relocation data calculating unit which calculates
10 relocation data in both a feeding direction and a scanning
direction for the image data read from said reference data
reading unit.

6. An image processing method comprising:

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15         a document reading step of reading a document at a
        constant speed and generating image data constituted by a
        digital signal;
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a storing step of storing the image data generated at the document reading step together with information about the size of said read document;

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        a enlargement/reduction specifying step of specifying
an enlargement/reduction condition when said read document
is to be output;

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a enlargement/reduction factor calculating step of
25 calculating a enlargement/reduction factor based on the

information about the document size stored at the storing
step and the enlargement/reduction condition specified at
the enlargement/reduction specifying step;

5 a enlargement/reduction step of carrying out a
enlargement/reduction processing for the image data stored
at the storing step based on the enlargement/reduction
factor calculated at the enlargement/reduction factor
calculating step;

10 an image processing step of carrying out an image
processing for the image data subjected to the
enlargement/reduction processing at the
enlargement/reduction step; and

15 an output step of outputting, as a mirror image, the
image data subjected to the image processing at the image
processing step.

7. The image processing method according to claim 6,
wherein the enlargement/reduction step includes

20 a first data transferring step of transferring
original image data to a unit which calculates relocation
data in a one-dimensional direction;

a first relocation data calculating step of
calculating relocation data for the original image data
transferred at the first data transferring step;

25 a second data transferring step of transferring the

relocation data calculated at the first relocation data
calculating step a unit which generates image data
corresponding to an image rotated by 90 degrees;

an image rotating step of generating image data
5 corresponding to the image rotated by 90 degrees with respect
to an image of the relocation data transferred at the second
data transferring step,

a third data transferring step of transferring the
image data obtained at the image rotating step said unit which
10 calculates relocation data in a one-dimensional direction;
and

a second relocation data calculating step of
calculating relocation data for the image data transferred
at the third data transferring step.

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8. The image processing method according to claim 6,
wherein the enlargement/reduction step includes

a first data transferring step of transferring
original image data to a first unit which calculates
20 relocation data in one of a scanning direction and a feeding
direction;

a first relocation data calculating step of
calculating relocation data for the original image data
transferred at the first data transferring step;

25 a second data transferring step of transferring the

relocation data calculated at the first relocation data calculating step to a second unit which calculates relocation data in the other one of the scanning direction and the feeding direction; and

5 a second relocation data calculating step of calculating relocation data for the relocation data transferred at the second data transferring step.

10 9. The image processing method according to claim 6, wherein the enlargement/reduction step is carried out by a unit which is different from the unit which executes the image processing step and relocation data are calculated at the same time in both a feeding direction and a scanning
15 direction.

10. The image processing method according to claim 6, wherein the enlargement/reduction step includes

 a reference data reading step of reading, at the
20 storing step, image data of a reference pixel for calculating relocation data in a plane area;

 a data transferring step of transferring the image data read at the reference data reading step to a unit which calculates relocation data in both a feeding direction and
25 a scanning direction; and

a relocation data calculating step of calculating relocation data for the image data transferred at the data transferring step.

5 11. A computer readable medium for storing instructions,
which when executed by a computer, causes the computer to
perform:

a document reading step of reading a document at a
constant speed and generating image data constituted by a
10 digital signal;

a storing step of storing the image data generated at the document reading step together with information about the size of said read document;

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        a enlargement/reduction specifying step of specifying
15  an enlargement/reduction condition when said read document
    is to be output;

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a enlargement/reduction factor calculating step of calculating a enlargement/reduction factor based on the information about the document size stored at the storing step and the enlargement/reduction condition specified at the enlargement/reduction specifying step;

a enlargement/reduction step of carrying out a enlargement/reduction processing for the image data stored at the storing step based on the enlargement/reduction factor calculated at the enlargement/reduction factor

calculating step;

an image processing step of carrying out an image processing for the image data subjected to the enlargement/reduction processing at the
5 enlargement/reduction step; and

an output step of outputting, as a mirror image, the image data subjected to the image processing at the image processing step.

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